

CLAIMS:

1. High pressure sodium lamp having a nominal power P_{la} , which is suitable to be operated at a very high frequency (VHF), having a discharge tube with a ceramic wall and an internal vessel diameter D_{int} , enclosing a discharge space in which a pair of electrodes at a mutual electrode distance ed and a filling of Na-amalgam with a sodium mol fraction (smf),
5 characterized in that the discharge tube has a ratio ed/ D_{int} between about 5.5 and 4.0.
2. Lamp according to claim1, characterized in that the wall thickness (wt) is $0.4 \leq wt \leq 0.6$ mm.
- 10 3. Lamp according to claim1 or 2, characterized in that the lamp has a wall load of at most 30 W/cm^2 .
4. Lamp according to claim1, 2 or 3, characterized in that:
 - $0.2 \leq ed/P_{la} \leq 0.35$;
 - 15 - an amalgam composition with $0.6 < \text{smf} < 0.75$;
 - the ratio internal discharge vessel diameter D_{int} to the nominal lamp power P_{la} is $0.045 \leq D_{int}/P_{la} \leq 0.08$;
 - the wall thickness (wt) is $0.4 \leq wt \leq 0.6$ mm.
- 20 5. Lamp according to claim1, 2, 3 or 4, characterized in that the filling also comprises Xe having a pressure at room temperature in the range of $400 \text{ mbar} \leq p_{Xe} \leq 1000 \text{ mbar}$.
- 25 6. Lamp according to claim 1, 2, 3, 4 or 5, characterized in that the electrodes are provided with emitter and that each of the electrodes has an electrode diameter, which specified relatively to the average lamp current (I_{la}) at nominal lamp power fulfils the relation: $0.2 < (D_{\text{electrode}})^2 / I_{la} < 0.45$, preferably $0.25 < (D_{\text{electrode}})^2 / I_{la} < 0.35$.

7. Lamp according to claim 1, 2, 3, 4, 5 or 6, characterized in that the lamp emits light in nominal operating condition with a color temperature T_C of at most 2500K.
8. A lighting system comprising a full electronic VHF driver for operating a
5 lamp according to any of the claims 1 to 7.
9. A system according to claim 8, wherein the VHF ballast is provided with resonant ignition means by which resonant ignition is applied on igniting the lamp.